IN THE CLAIMS:

1. (Currently Amended) A pulse ~~Pulse~~ magnetron which is pulsed for oscillation, comprising:

an anode having a number of vanes mounted radially on ~~the~~ an inner wall of a cylindrical anode shell thereof;

a cathode provided at ~~the~~ a center of the anode to face ~~the~~ an inner end of each vane; and

a pair of pole pieces provided for applying a magnetic field substantially in parallel to the cathode across an interaction space defined between ~~the~~ an outer side of the cathode and the inner ends of the vanes;

wherein a radius r_a of ~~the~~ an inscribed circle defined by the inner ends of the vanes and a radius r_c of the cathode surface are determined by an equation ~~(1);~~

~~wherein said radius r_a and radius r_c are measured at a point where the magnetic flux density is maximum along the axial direction of the cathode and the height of the vanes;~~

~~wherein the anode and the cathode are arranged to satisfy at least either (i) increasing the radius of the inscribed circle defined by the inner ends of the vanes or (ii) decreasing the radius of the cathode surface as the magnetic flux density is declined along the axial direction of the cathode and the height of the vanes;~~

~~wherein the equation (1) is represented as follows:~~

$$V_a = 942(r_a^2 - r_c^2)(10^4 b - 10650 / n\lambda) / n\lambda \quad , \qquad (1)$$

~~where V_a is the pulsed anode voltage (in V), r_a is the radius of the anode (the radius in cm of an inscribed circle defined by the inner ends of the vanes), r_c is the radius of the cathode surface (in cm), b is the a minimum of the magnetic flux density T along the an axis of the interaction~~

~~space, n is the (number of divisions (the number of the vanes))/2, and λ is the oscillation wavelength (in cm).~~

wherein V_a is a pulsed anode voltage in volts, said r_a and r_c are in cm, b is a minimum magnetic flux density in Tesla along an axial direction of the interaction space, said axial direction being parallel to said inner wall, n is given by: (a number of divisions (the number of the vanes))/2, and λ is an oscillation wavelength in cm;

wherein using of said equation is modified such that said radius r_a and said radius r_c are applied at a point where magnetic flux density is maximum along said axial direction of the interaction space;

wherein the anode and the cathode are arranged to satisfy at least either (i) increasing the radius of the inscribed circle defined by the inner ends of the vanes to r_a' or (ii) decreasing the radius of the cathode surface to r_c' at a point the magnetic flux density for both cases (i) and (ii) is minimum along said axial direction of the interaction space for points corresponding to r_a' or r_c'.

2. (Currently Amended) A pulse magnetron of claim 1, wherein ~~Magnetron having a central cathode (2) having an outer surface facing a plurality of cavity resonators formed by a corresponding plurality of vanes (12) extending from a shell anode (1) surrounding said cathode in such a way as to form an interaction space (4) between inner ends of the vanes and said outer surface of the cathode, characterized by an increasing~~ a distance between the outer surface of the cathode and the inner ends of the vanes towards a center of said interaction space is increased.

IN THE ABSTRACT:

~~The object of the present invention is to provide a pulse magnetron which can inhibit unwanted oscillation at an operation point lower than the rated level in the rise or decay of a pulse, attenuate spurious radiation at lower frequencies than the fundamental oscillation frequency, and produce an improved symmetrical profile of output spectrum. The~~ A pulse magnetron ~~of the present invention~~ includes ~~an~~ a cylindrical shell anode, a cathode provided at the center of the anode having a number of vanes mounted radially on an inner wall of the cylindrical anode shell, and a pair of pole pieces provided for applying a magnetic field to an interaction space where the outer side of the cathode is opposed to ~~the~~ inner ends of the vanes. ~~The radius r_a of the inscribed circle defined by the inner ends of the vanes and the radius r_c of the cathode surface satisfy the operation theory equation for the minimum value of the magnetic flux density along the axial direction of the cathode at both ends of the inner end of the height of the vanes in the interaction space.~~ The anode and the cathode are arranged to satisfy at least either (i) increasing the radius of the inscribed circle defined by the inner ends of the vanes or (ii) decreasing the radius of the cathode surface as the magnetic flux density along the axial direction of the cathode at both ends of the inner end of the height of the vanes.